CASE

OF

INTERNAL STRANGULATION OF THE INTESTINES:

WITH REMARKS.

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Many cases of disease are brought before the attention of every surgeon who has an extensive field for observation, in the treatment of which, the resources of medicine and surgery are almost entirely unavailing, and of these, none are more painful to witness, or to treat, than those which result from invincible obstruction of the intestinal tube; the unsuccessful treatment of such cases depending upon our ignorance of the nature of the malady itself, which necessitates the administration of a mere routine of remedies, without our being able to arrive at more than a surmise as to the position and kind of obstruction.

In some instances moreover, as in the one before us, certain symptoms exist, calculated to mislead and considerably augment the usual difficulty in making a correct diagnosis. Nevertheless, there are certain facts to be elicited from the history of these cases and the sensations of the patient, which, when carefully studied, may lead us to correct conclusions as to the seat and nature of the obstruction: and the importance of having a series of these cases upon record, will, I presume, justify my bringing forward the following one, which, though isolated, is one of a class in which no other measures than those of a mechanical nature can be supposed to have any chance of success; and hence it becomes important that we should study those symptoms, which lead to a correct diagnosis at an early period, when the more advantageous circumstances of the case are most likely to conduct an operation to a successful issue.

On Thursday, the 26th of December last, Mr. Gay was requested, in consultation with Mr. Burchell of Shoreditch, to see Thomas Wallis, a small but well-proportioned man, aged 42, under the following circumstances:—

About four years previously, and soon after lifting a heavy weight, he was suddenly seized with severe pain, referred to the left iliac region, which immediately afterwards extended itself across the abdomen to the right side; the pain, which was of a "pinching" character, occurred in paroxysms, with intervals of perfect repose, and was accompanied with constipation, sickness, profuse perspiration, and, in his own words, "great helplessness."

These symptoms increased in severity, the pain being at times agonising, and it was not until after four days, when copious action of the bowels ensued, that they subsided as rapidly as they had set in. From that time up to the period of which I am about to speak more particularly, he had, according to his own account, at least thirty attacks of a similar character, lasting from one to four days, always commencing in the *left side*, and marked by severe pain, constipation, and extreme debility; and occasionally with the superaddition of

vomiting and profuse perspiration. During the attacks, hot bran poultices and fomentations gave most relief, and his recovery on each occasion had been coincident with free action of the bowels.

On Saturday, the 21st, after eating his dinner, he complained of a return of the pain, and as his ordinary aperient dose did not take effect, Mr. Burchell was sent for, and further aperient remedies were exhibited. On the following day (Sunday), vomiting supervened, and he complained that the pain had extended itself across the abdomen to the right side, but was not much increased by pressure; the pulse was 100, slightly jerking, and the tongue furred. Aperient medicines were again administered, but without effect.

On the 23rd, the sickness was more constant, and everything taken into the stomach was almost immediately rejected. In the course of the day the pain in the *left iliac region* became very severe, occurring in paroxysms at short intervals, and considerably aggravated by each act of vomiting; the pulse remaining nearly the same. A blister was applied over the seat of pain, calomel and opium given every four hours, and enemata of castor oil administered.

24th.—One enema brought away a small quantity of fæcal matter: the others returned as injected immediately after they were administered: the pain in the left side still formed a prominent subject of complaint, and it was only when pressed that the other parts of the abdomen gave evidence of tenderness. There was no heat of skin or other symptom of pyrexia. The calomel and opium were continued, together with hot fomentations to the abdomen, and croton oil was afterwards administered in minim doses every four hours.

On the 26th, the whole of the symptoms were decidedly worse, and the vomited matters yielded an undoubted fæcal odour; hiccup now ensued, together with rigidity of the muscles of the lower jaw and of each hand. Mr. Gay saw him at 5 o'clock, P.M., when his condition was as follows:—He was lying on his back, his face deathly pale, with a countenance expressive of extreme anxiety, and bedewed with perspiration. The breathing and heart's action were regular and tranquil. On directing attention to the abdomen, it was found somewhat tumid, hard to the touch, but presenting no marked irregularity of surface or enlargement; pressure over the left iliac fossa occasioned intense pain, but over other parts of the abdomen there appeared little more than slight tenderness. There was dulness on percussion around the umbilicus and over the cæcum, but resonance along the course of the colon; no enlarged convolutions of intestines could be detected.

Fæcal vomiting was frequent, the tongue dryish and coated with a thick fur, the pulse feeble and thready, but regular: attempts were made to pass O'Beirne's tube, and an œsophageal bougie, but these could not be introduced further than 6 or 7 inches, and fluids injected by this means returned almost instantly by the side of the tube, nor could the latter be passed further, by taking advantage of the moment of injection for pushing it onward; and when it seemed to have overcome the obstruction, the tube was found to have bent, and its extremity protruded externally.

Throughout this attack, the urine had not materially lessened in quantity. There could be no doubt that intestinal obstruction of a very unyielding nature existed here, and that in the adoption of measures to overcome it, if any presented themselves after due consideration, the only chance lay in promptitude. Five days had now elapsed since the setting in of the symptoms, and no relief whatever had been afforded the patient by the ordinary measures employed.

The preceding twenty-four hours had witnessed so rapid an increase in the severity of the symptoms, that all were of opinion that the sufferer would speedily fall a victim to his malady, unless some relief was speedily obtained.

Crude mercury was not given, since, from the evidence afforded of its effects in similar cases, it was not thought likely to be of service.*

It was desirable to make out as clearly as the preceding symptoms would admit, the exact nature and seat of the obstruction. The pain referred it to the left iliac region, and the previous history of the patient led to the inference that chronic disease of some kind existed in a portion of the intestinal tube or in parts contiguous. Mr. Gay surmised

* See Med. Chir. Trans., vol. xxxi., p. 62.

that the omentum had become adherent to the abdominal parietes, and that a knuckle of intestine had (as he had before seen), forced its way through a rent in its tissue and become strangulated.

The evidence gained from percussion appeared rather to involve the question in difficulties, than to throw any light upon it. The dulness on the right side was referred to a distended cæcum, and this, with resonance along the colon, seemed to imply that the obstruction was situated in the ascending colon. But this view again was irreconcileable with the fact of the chief seat of pain being on the opposite side, and the early setting in of vomiting.

The difficulties in determining the seat of obstruction appeared to increase as the investigation was pursued, and we could only fall back upon the fact that such obstruction existed; which, from the early occurrence of vomiting, was supposed to be high up in the bowel.

It was reasonable to suppose, that the temporary attacks of constipation from which the patient had suffered for the four years preceding this illness were due to the same cause as at present acting with mitigated severity, and it was concluded that this cause must be of a fixed and permanent nature; that in short there was constriction occasioned either by an abnormal band or bands of cellular tissue or the edge of an aperture in the mesentery or omentum, beneath or through which a coil of intestine had passed.

In this state of affairs it became a matter of consideration if any, or how far, surgical interference was called for. The patient had become anxious that something further might be tried in order to relieve him, and expressed himself willing to submit to anything. After due consultation, in which the further exhibition of remedies without resorting to operation, and the probable failure of an operation if put in practice, were duly considered, the conclusion was arrived at that, as all attempts by ordinary measures had failed to procure any relief, the only chance for the patient, however small that might be, was in seeking for and relieving the intestine: accordingly, the room being raised in temperature, the bladder was emptied, and the patient narcotised by chloroform. Mr. Gay proceeded to operate in the presence of Messrs. Coulson, Childs, Burchell, and myself.

The abdominal cavity was opened by an incision in the linea alba about four inches in length, between the umbilicus and pubes; this situation being chosen as the safer one, since from it all parts of the abdominal cavity were within reach. A portion of distended and deeply congested ileum at once protruded through the wound, which it became necessary to enlarge two inches upwards, avoiding the umbilicus. Attention was first directed to the seat of pain, but no incarceration being found, the ileum was traced to the right side, where several coils of contracted intestine were discovered, constricted by what appeared to be a portion of stretched bowel. On closer examination this was found to be the vermiform process of the cæcum encircling the bowel, and producing a tight constriction. Some adhesions were broken down so as to admit of the release of that portion of intestine which had passed through this loop of the appendix, after which the fluid contents of the bowel passed through the part of the canal which had been constricted, affording evidence of its freedom. During the manipulations, care was taken to keep up the temperature of the protruded viscera, and these having been gradually returned as the wound was closed by suture, the parts were maintained in position by strapping, pads of lint, and circular rollers.

The operation lasted a little more than half an hour, a considerable part of which time was occupied in searching for the strangulation, the situation of the pain and tenderness having misguided as to the seat of obstruction.

The effect of the chloroform soon passed off, and some wine was administered: the patient's pulse, which had been very low during the operation, increased in power, and he described himself as relieved, but no action of the bowels ensued, and, within half an hour after the operation, vomiting returned, attended with eructations of fœtid gas.

During the night ammonia was administered every four hours, and brandy and water at intervals. The vomiting and constipation, however, continued; and he gradually sank, and died twenty-two hours after the operation.

For the following details of the autopsy I am indebted to Dr. Peacock's notes.

Post-mortem twenty-four hours after death.—On laying open the cavity of the abdomen, the small intestines were found greatly congested, distended, and agglutinated together by soft and recently exuded lymph. The seat of the obstruction was very readily detected in the right iliac region, and the strangulation proved to have been formed by a protrusion of a portion of the small intestine through a ring formed by the appendix vermiformis cæci, the ileum, and the cæcum.

The annexed drawings, which I made from the parts in their recent condition, exhibit the mode of strangulation.

Fig. 1.

Fig. 2.

Fig. 1. Represents the intestines removed and slightly inflated, exhibiting the appendix encircling a portion of ileum, the parts being placed as they were before operation.

1. Cæcum.
2. Ileum above the strictured portion.
3. Appendix vermiformis cæci.
4. Cut edge of the mesentery.
5. Strangulated intestine.

Fig. 2. Represents the same parts with the strangulated portion raised, so as to exhibit the head of the appendix, together with the band of false membrane.

1. Cæcum.
2. Ileum.
3. Enlarged extremity of the appendix.
4. Abnormal band connecting the ileum and cæcum.
5. Strangulated intestine.

The appendix was much thickened, and its extremity adherent to the ileum at a point about twenty-five inches above the cæcum, the same portion of the intestines being also attached to the cæcum by a short adhesion: a complete ring was thus formed by the cæcum on the right side, the appendix in front, the ileum on the left side, and the adhesion between the cæcum and ileum behind.

The ring would admit the ends of three fingers, and the adhesions were evidently of old date.

The coats of the ileum, at the point where it was attached to the cæcum and appendix, were much thickened, and the canal about a quarter of an inch below this was so constricted that it would only admit the point of the little finger. A knuckle of intestine several inches in length, commencing at the seat of constriction, and extending downwards in the course of the canal, was evidently that which had suffered strangulation.

It must have entered the ring from above, so that it had been completely twisted upon itself, and the constricted portion had tightly embraced the thickened end of the appendix. The effects of the pressure which it had sustained were very clearly shown by the recent false membranes which covered its surface, and the congestion of its vessels.

The small intestines below the seat of constriction, and the whole of the large intestines, were contracted, so as to be nearly empty, and presented no appearance of disease.

Above the constriction, on the contrary, the ileum was very greatly distended with thin fæcal matter, and the coats of the intestine were intensely inflamed, being in places quite black, or displaying ash-coloured sloughs, and so soft as to give way on the slightest traction.

The mucous membrane of this part of the canal was inflamed, and in some places gangrenous.

The heart and right kidney were healthy, with the exception of some congestion of the latter: the other organs were not examined.

Among cases of intestinal obstruction strangulation of a portion of bowel within the abdomen is not of rare occurrence, and may take place in several ways, the most common of which are where it is occasioned by circular or fissured spaces, formed by bands of false membrane running from one organ to another, by adhesion of two convolutions at a small point, or by perforation of the mesentery or omentum: but there is a greater variety in these cases than in those of hernia, scarcely two cases being found alike.

Of 169 cases of obstruction collected by Mr. Phillips, 133 were fatal, and more than one-third were "caused by constriction by bands, by adhesion, by the passage of the intestine through some abnormal opening, or by a twisting of the intestine upon itself."*

Of these varieties the case which forms the subject of the present communication is amongst the rarest, nor am I aware of any case similar. Of 15 cases related by Dr. Rokitansky of internal straugulation of the intestines, not one of this variety occurs.

The case presents several points of interest, exclusive of the peculiar character of the strangulation itself; viz.,

The numerous occasions on which temporary obstructions of the bowels, accompanied for the most part by the same symptoms as at present had occurred.

The sudden accession, and almost as sudden cessation of the symptoms, on each attack, which on some occasions lasted as much as four days; facts pointing to a persistent cause of obstruction, and forming valuable features in the diagnosis, as regarded the nature of the strangulation.

The pain and tenderness being so constant in the left iliac region, though the point of strangulation was at the cœcum, which occupied its usual position.

The failure in introducing the flexible tube more than six or seven inches from the anus, though several attempts were made by practised hands, arose, as was afterwards discovered, from a collapsed condition of the rectum, and of a very prominent sacrum.

The last fact, in conjunction with the situation of the pain and tenderness, pointed forcibly to the sigmoid flexure as the seat of obstruction, and might have justified the performance of Amussat's operation.

When obstruction of the bowels, and symptoms of strangulation, exist in conjunction with the occurrence of an en-

* Med. Chir. Trans., vol. xxxi. page 4.

largement in any of the usual seats of hernia, the treatment is regulated by thoroughly established, rules, and unless there has been much delay, these are attended with a good prospect of a successful issue; but on the contrary, when the same symptoms exist, without any such external swelling, and continue persistent notwithstanding the employment of ordinary measures for their alleviation, it becomes a question of much importance whether operative surgery furnishes any prospect of relief, or whether the patient so suffering must be left to perish without such chance being afforded him.

Cases occur from time to time, in which there is obstinate and fatal constipation, and a post-mortem investigation discloses that the nature of the obstruction was such, that had Amussat's operation been practised, very favourable results might have been anticipated.* So also, in post-mortem examinations of cases of internal strangulation, instances every now and then are met with, in which the bowels have been confined by a thread, as it were, of false membrane, the result of some previous inflammatory attack, so situated as to have been susceptible of easy release had an opening been made in its neighbourhood: several of such cases have come under my observation, two of which arose from adhesion between the bowel and the walls of the abdomen, in the neighbourhood of the femoral opening and internal ring, allowing a portion of the intestine to become strangulated beneath.

Thus it appears cases exist in which the strangulation might be relieved if we possessed the means of ascertaining its situation, yet surgeons differ in their opinions with regard to the performance of gastrotomy in such cases: the opinion of Mr. Lawrence is given in his work as follows:—"Thus the danger of the proposed operation is certain, and so great that it cannot be overrated; the existence of internal strangulation is quite uncertain, and the power of removing the obstruction, even if it were discovered, somewhat doubtful; again, in some cases apparently desperate, spontaneous recovery takes place when our treatment has been unavailing."

I think that a consideration of the circumstances of the foregoing case, together with those of others on record, would lead to the conclusion that in some cases of intestinal obstruction the evidence of the character of the obstruction is sufficiently good to justify, and require, the attempted relief by operation, and that in the course of time, when we have more facts to bear upon the question, the diagnosis may be much facilitated; still, under the present difficult state of diagnosis, great caution is required in selecting cases, and we ought not to hazard this fearful operation, the success of which is presumed possible in certain cases only, when the indications of the nature and locality of the obstruction are not sufficiently positive to outweigh the prejudicial effect of the operation *per se*, and its chance of being inadequate to relieve the patient.

The general maxim, that it is better to try a doubtful remedy than to do nothing, requires a careful discrimination in these cases, since many are on record in which nature has brought about a favourable issue, though all other measures had failed.* The number of instances in which the operation of gastrotomy has been performed are so few, and those necessarily at so advanced a period of the malady, that it would appear irrational to be unfavourably biassed against the operation by its as yet doubtful results.

If there be a chance of success in the operation, those symptoms which, being well understood, tend most to provide the means of diagnosticating correctly the nature and seat of obstruction, are of the greatest importance, and it is principally to further investigations, with a view of determining these, that we must look in order that the operation may be placed in a more favourable position as regards its practicability in certain cases of internal strangulation. The cases of spontaneous recovery after all remedial measures have failed, alluded to by Mr. Lawrence, would appear to be such as the following detailed by M. Jobert, in which the man, æt. 28, was reduced to a condition which threatened fast approaching death: having refused the operation of gastrotomy he recovered under the use of leeches round the anus, warm baths, warm fomentations, and injections. But it should be observed, that enough evi-

* Lancet, Aug. 9th.

* Traité théoretique et pratique des maladies chirurgicales du canal intestinal, par M. Jobert.

dence of the nature of the obstruction is not recorded to justify the conclusion that an operation, even at an early period, would have been attended with success; and in such cases the chances of the operation are reduced to a minimum.

Since this case was communicated to the Abernethian Society, an elaborate paper upon the subject, by Mr. Robinson, has appeared in the London Journal of Medicine for July, in which he draws the following conclusions:—

"1. Internal strangulation most frequently occurs in the ileum.

2. Membranous bands are the most frequent cause of internal strangulation.

3. Partial peritonitis is more likely to induce obstruction than general.

4. All the convolutions of the intestines may be matted together by adhesion without obstruction.

5. Mechanical are not the sole causes of obstruction, as there is reason to believe that the mechanical cause must have been in existence some time prior to the occurrence of the symptoms; other causes must arise to produce them, and the most frequent are sudden exercise, and errors of diet.

6. It is possible for spontaneous cure to take place by ulceration of an obstructing band.

7. The symptoms vary considerably in different cases.

8. The order in which the symptoms arise is important in diagnosis.

9. There are no symptoms by which one obstruction can be distinguished from another.

10. The strength of the patient must be maintained as part of the treatment.

11. Bleeding requires great caution.

12. The operation of gastrotomy is only justifiable as a forlorn hope.

13. Metallic mercury has proved useful, chiefly from obstruction from ligamentous bands."

Royal Free Hospital,
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